AMENDMENTS TO THE CLAIMS:

Please amend claims the claims as follows:

What is claimed is:

1.   (Currently Amended) A frame transfer method in a network for transferring a data frame sent from a source on the network to a predetermined destination, <u>said method</u> comprising:

adding, to ~~applied~~ said data frame, an expansion tag containing information about forwarding to an egress edge node to said destination, to make an expansion frame; and

relaying <u>by one or more nodes on said network,</u> said data frame based on said forwarding information of said added expansion tag, to transfer the frame to said egress <u>edge</u> node, ~~by each node on said network~~ <u>said node relaying said data frame by using said</u> <u>expansion tag to determine an output port without conducting an MAC address search.</u>

2.   (Currently Amended) A frame transfer method in a network for transferring a data frame sent from a source on the network to a predetermined destination, <u>said method</u> comprising:

adding, to ~~applied~~ said data frame, an expansion tag containing information about forwarding to an egress edge node to said destination and information about customers to which said source and said destination belong, to make an expansion frame; ~~;~~ and

relaying <u>by one or more nodes on said network,</u> said data frame based on said forwarding information of said added expansion tag to transfer the frame to said egress <u>edge</u> node ~~by each node on said network~~.

3.-4.   (Cancelled)

5.   (Previously Presented) The frame transfer method in the network as set forth in claim 1, wherein, at an ingress node of the source of said data frame on said network, said expansion tag is generated based on network information of said data frame and said generated expansion tag is added to make said expansion frame.

6.   (Currently Amended) The frame transfer method in the network as set forth in claim 1, wherein, at said egress node on said network, said expansion tag is deleted from said expansion frame to make said data frame and said data frame is transferred to said transfer destination.

7.   (Previously Presented) The frame transfer method in the network as set forth in claim 1, wherein said data frame comprises an Ethernet frame.

8.   (Original) The frame transfer method in the network as set forth in claim 6, wherein a VLAN tag of said Ethernet frame is replaced by said expansion tag to make said expansion frame.

9.   (Original) The frame transfer method in the network as set forth in claim 7, wherein said expansion tag is inserted immediately after a source MAC address of said Ethernet frame to make said expansion frame.

10.   (Previously Presented) The frame transfer method in the network as set forth in claim

7, wherein, when said Ethernet frame fails to have said VLAN tag, said expansion tag is

added between a source MAC address and Ethernet attribute information to make said

expansion frame.

11.   (Previously Presented) The frame transfer method in the network as set forth in claim

1, wherein said forwarding information comprises identification information comprising

identifier information of said egress node or label information for reaching said egress node.

12.   (Previously Presented) The frame transfer method in the network as set forth in claim

1, wherein said forwarding information comprises identification information comprising

identifier information of said egress node or label information for reaching said egress node

and additionally identifier information of said ingress node.

13.-17. (Cancelled)

18.   (Original) The frame transfer method in the network as set forth in claim 1, wherein

a length of said expansion tag is 32 bits and a length of a storage region of said expansion tag

is an integral multiple of 32 bits.

19.   (Currently Amended) The frame transfer method in the network as set forth in claim

1, wherein said ingress node in said network [[has]] comprises a table which makes an

address of said transfer destination and identification information of said egress node

correspond with each other and a table which makes identification information of said egress

node and output port information correspond with each other,

wherein a core node in said network [[has]] comprises a table which makes

identification information of said egress node and output port information correspond with

each other, and

wherein said egress node [[has]] comprises a table which makes an address of said

transfer destination and output port information correspond with each other and a table which

makes identification information of said egress node and output port information correspond

with each other.

20.   (Currently Amended) The frame transfer method in the network as set forth in claim

1, wherein said ingress node in said network [[has]] comprises a table which makes an

address of said transfer destination and identification information of said egress node

correspond with each other, a table which makes identification information of said egress

node and output port information correspond with each other, and a table which makes

identification information of said ingress node and one or a plurality of output port

information correspond with each other,

wherein a core node in said network [[has]] comprises a table which makes

identification information of said egress node and output port information correspond with

each other and a table which makes identification information of said ingress node and one or

a plurality of output port information correspond with each other, and

wherein said egress node [[has]] comprises a table which makes an address of said

transfer destination and output port information correspond with each other, a table which

makes identification information of said egress node and output port information correspond

with each other and a table which makes identification information of said ingress node and

one or a plurality of output port information correspond with each other.

21.   (Previously Presented) The frame transfer method in the network as set forth in claim

20, wherein identification information of said ingress node comprises an existing VLAN tag

value or a group identifier obtained by grouping a part of existing VLAN tags or a group

identifier obtained by grouping all the existing VLAN tags.

22.   (Currently Amended) The frame transfer method in the network as set forth in claim

1, wherein said ingress node in said network [[has]] comprises a table which makes an

address of said transfer destination, identification information of said egress node and

customer information of said transfer destination correspond with each other and a table

which makes identification information of said egress node and output port information

correspond with each other,

        wherein a core node in said network [[has]] comprises a table which makes

identification information of said egress node and output port information correspond with

each other, and

        wherein said egress node [[has]] comprises a table which makes customer information

of said transfer destination and output port information correspond with each other and a

table which makes identification information of said egress node and output port information

correspond with each other.

23.- 48.   (Cancelled)

49.   (Currently Amended) A node in a network for transferring a data frame sent from a source on the network to a predetermined destination, comprising:

a frame processing element which adds, to ~~applied~~ said data frame, an expansion tag containing information about forwarding to an egress edge node to said destination, to make an expansion frame; and

a switch element which receives said expansion frame to transfer the frame to a path to said egress node based on said forwarding information of said expansion tag.

50.   (Currently Amended) A node in a network for transferring a data frame sent from a source on the network to a predetermined destination, comprising:

a frame processing element which adds, to said data frame, an expansion tag containing information about forwarding of an ingress node which has received said frame, to make an expansion frame, when applied said data frame is a frame to be broadcast; and

a switch element which receives said expansion frame to transfer the frame to a path to ~~each~~ at least one node on said network based on said forwarding information of said expansion tag.

51.   (Currently Amended) A node in a network for transferring a data frame sent from a source on the network to a predetermined destination, comprising:

a frame processing element which adds, to ~~applied~~ said data frame, an expansion tag

containing information about forwarding to an egress edge node to said destination and

customer information of said destination, to make an expansion frame; and

a switch element which receives said expansion frame to transfer the frame to a path

to said egress node based on said forwarding information of said expansion tag.

52.-55. (Cancelled)

56.   (Previously Presented) A node in a network for transferring a data frame sent from a

source on the network to a predetermined destination, comprising:

a switch element which receives an expansion frame with an expansion tag including

information about forwarding to an egress edge node to said destination to transfer the frame

to a path to said egress node based on said forwarding information of said expansion tag.

57.   (Currently Amended) A node in a network for transferring a data frame sent from a

source on the network to a predetermined destination, comprising[[:]] a switch element which

receives an expansion frame with an expansion tag including forwarding information of an

ingress edge node which has received said frame, to transfer the frame to a path to each node

on said network based on said forwarding information of said expansion tag.

58.-59. (Cancelled)

60.   (Currently Amended) A node in a network for transferring a data frame sent from a

source on the network to a predetermined destination, comprising[[:]] a switch element which

receives an expansion frame with an expansion tag including information about forwarding to

an egress edge node to said destination and customer information of said destination to

transfer the frame to a path to said egress node based on said forwarding information of said

expansion tag.

61.-64. (Cancelled)

65.   (Currently Amended) The node as set forth in claim 49, wherein said frame

processing element comprises:

        a frame attribute detector for extracting frame attribute information of ~~applied~~ said

data frame to an input port of the node;

        an expansion tag generator for generating said expansion tag based on said frame

attribute information; and

        a frame converter for adding said generated expansion tag to ~~applied~~ said data frame

to convert the frame into an expansion frame.

66.   (Currently Amended) The node as set forth in claim 65, wherein said expansion tag

generator includes:

        a correspondence information table in which information about correspondence

between frame attribute information generated by said frame attribute detector and network

information is stored; and

an expansion tag generation unit for, after reading network information corresponding

to said frame attribute information from said correspondence information table based on said

frame attribute information, generating an expansion tag based on said network information.

67.   (Currently Amended) The node as set forth in claim 65, wherein said frame converter,

when a data frame applied to an input port of said node [[is]] comprises an Ethernet frame,

inserts said expansion tag after said destination MAC address.

68.   (Currently Amended) The node as set forth in claim 65, wherein said frame converter

comprises:

an expansion tag separation unit for, when said data frame [[is]] comprises an

Ethernet frame, separating said expansion tag from said expansion frame transferred from

said frame switch; and

a frame check sequence calculation unit for recalculating a frame check sequence of

said Ethernet frame transferred from the expansion tag separation unit to rewrite the frame

check sequence.

69.   (Original) The node as set forth in claim 49, further comprising an expansion tag

deletion circuit for deleting said expansion tag included in said frame with an expansion tag

to output the frame as a data frame.

70.   (Currently Amended) The node as set forth in claim 69, wherein said expansion tag

deletion circuit comprises:

an expansion tag separation unit for separating said expansion tag from said

expansion frame; and

an FCS calculation unit for recalculating ~~an FCS~~a Frame Check Sequence (FCS) of

said Ethernet frame transferred from the expansion tag separation unit to rewrite the FCS.

71.   (Previously Presented) The node as set forth in claim 49, wherein said switch element

comprises:

a frame forwarding unit for receiving an expansion frame transferred from said frame

processing element to obtain output port information based on network information stored in

an expansion tag in said expansion frame; and

a packet switch unit for receiving an expansion frame and said output port information

transferred from said frame forwarding unit to output said frame with an expansion tag to a

port as set forth in said output port information.

72.   (Previously Presented) The node as set forth in claim 71, wherein said frame

forwarding unit comprises:

an expansion tag information table indicative of correspondence between forwarding

information in an expansion tag of said expansion frame received and output port information

of said packet switch; and

a forwarding path search unit for extracting forwarding information from an

expansion tag of said expansion frame received and referring to said expansion tag

information table to obtain output port information from the forwarding information.

73.   (Currently Amended) The node as set forth in claim 72, wherein said forwarding

information comprises identification information ~~composed of~~comprising identifier

information of said egress node or label information for reaching said egress node.

74.   (Currently Amended) The node as set forth in claim 72, wherein said forwarding

information comprises identification information comprising~~composed of~~identifier

information of said egress node or label information for reaching said egress node and

additionally identifier information of said ingress node.

75.   (Previously Presented) The node as set forth in claim 72, wherein said forwarding

information comprises identification information comprising identifier information of said

ingress node.

76.   (Previously Presented) The node as set forth in claim 72, wherein said forwarding

information comprises identification information comprising identifier information of said

egress node and identifier information of a domain in each hierarchy to which the node

belongs or label information for reaching said egress node.

77.   (Currently Amended) The node as set forth in claim 49, wherein said ingress node in

said network [[has]] comprises a table which makes an address of said transfer destination

and identification information of said egress node correspond with each other and a table

which makes identification information of said egress node and output port information

correspond with each other,

wherein a core node in said network [[has]] comprises a table which makes

identification information of said egress node and output port information correspond with

each other, and

wherein said egress node [[has]] comprises a table which makes an address of said

transfer destination and output port information correspond with each other and a table which

makes identification information of said egress node and output port information correspond

with each other.

78.   (Currently Amended) The node as set forth in claim 49, wherein

said ingress node in said network [[has]] comprises a table which makes an address of

said transfer destination and identification information of said egress node correspond with

each other, a table which makes identification information of said egress node and output port

information correspond with each other, and a table which makes identification information

of said ingress node and one or a plurality of output port information correspond with each

other,

a core node in said network [[has]] comprises a table which makes identification

information of said egress node and output port information correspond with each other and a

table which makes identification information of said ingress node and one or a plurality of

output port information correspond with each other, and

said egress node [[has]] comprises a table which makes an address of said transfer

destination and output port information correspond with each other, a table which makes

identification information of said egress node and output port information correspond with

each other and a table which makes identification information of said ingress node and one or

a plurality of output port information correspond with each other.

79.   (Previously Presented) The node as set forth in claim 49, wherein identification

information of said ingress node comprises an existing VLAN tag value or a group identifier

obtained by grouping a part of existing VLAN tags or a group identifier obtained by grouping

all the existing VLAN tags.

80.   (Currently Amended) The node as set forth in claim 49, wherein said ingress node in

said network [[has]] comprises a table which makes an address of said transfer destination,

identification information of said egress node and customer information of said transfer

destination correspond with each other and a table which makes identification information of

said egress node and output port information correspond with each other,

        wherein a core node in said network [[has]] comprises a table which makes

identification information of said egress node and output port information correspond with

each other, and

        wherein said egress node [[has]] comprises a table which makes customer information

of said transfer destination and output port information correspond with each other and a

table which makes identification information of said egress node and output port information

correspond with each other.

81.   (Currently Amended) The node as set forth in claim 49, wherein said ingress node in

said network [[has]] comprises a table which makes an address of said transfer destination,

identification information of said egress node and identification information of a domain in

each hierarchy to which the node belongs correspond with each other, and a table which

makes identification information of said egress node, identification information of a domain

in each hierarchy to which the node belongs and output port information correspond with

each other,

wherein a core node in said network [[has]] comprises a table which makes

identification information of said egress node, identification information of a domain in each

hierarchy to which the node belongs and output port information correspond with each other,

and

wherein said egress node [[has]] comprises a table which makes an address of said

transfer destination and output port information correspond with each other, and a table

which makes identification information of said egress node, identification information of a

domain in each hierarchy to which the node belongs and output port information correspond

with each other.

82.   (Currently Amended) In a network for transferring a data frame sent from a source on

the network to a predetermined destination, a frame transfer program executed in a processer

on a node in the network for controlling transfer of said data frame, comprising the functions

of:

adding, to applied said data frame, an expansion tag containing information about

forwarding to an egress edge node to said destination to make an expansion frame, and

receiving said expansion frame to transfer the frame to a path to said egress node

based on said forwarding information of said expansion tag.

83.   (Cancelled)

84.   (Currently Amended) In a network for transferring a data frame sent from a source on

the network to a predetermined destination, a frame transfer program executed <u>in a processer</u>

[[on]] <u>comprising</u> a node in the network for controlling transfer of said data frame,

comprising the functions of:

        adding, to ~~applied~~ said data frame, an expansion tag containing information about

forwarding to an egress edge node to said destination and customer information of said

destination to make an expansion frame, and

        receiving said expansion frame to transfer the frame to a path to said egress node

based on said forwarding information of said expansion tag.

85.-88. (Cancelled)

89.   (Currently Amended) In a network for transferring a data frame sent from a source on

the network to a predetermined destination, a frame transfer program executed <u>in a processer</u>

[[on]] <u>comprising</u> a node in the network for controlling transfer of said data frame,

comprising the function of:

        receiving an expansion frame with an expansion tag including information about

forwarding to an egress edge node to said destination added to ~~applied~~ said data frame to

transfer the frame to a path to said egress node based on said forwarding information of said

expansion tag.

90.   (Currently Amended) In a network for transferring a data frame sent from a source on

the network to a predetermined destination, a frame transfer program executed <u>in a processer</u>

[[on]] <u>comprising</u> a node in the network for controlling transfer of said data frame,

comprising the function of:

    receiving an expansion frame with an expansion tag including forwarding information

of an ingress edge node which [[has]] <u>comprises</u> received said frame added to ~~applied~~ said

data frame to transfer the frame to a path to each node on said network based on said

forwarding information of said expansion tag.

91. and 92. (Cancelled)

93.   (Currently Amended) In a network for transferring a data frame sent from a source on

the network to a predetermined destination, a frame transfer program executed <u>in a processer</u>

[[on]] <u>comprising</u> a node in the network for controlling transfer of said data frame,

comprising the function of:

    receiving an expansion frame with an expansion tag including information about

forwarding to an egress edge node to said destination and customer information of said

destination added to ~~applied~~ said data frame to transfer the frame to a path to said egress node

based on said forwarding information of said expansion tag.

94.-97. (Cancelled)

98.   (Withdrawn)   A node configured to generate and transfer an Ethernet frame, the

Ethernet frame comprising an expansion tag storage region comprising:

a plurality of expansion tags;

an expansion tag information region containing information about a kind of

the plurality of expansion tags; and

an expansion tag identification region containing information according to the

kind of the plurality of expansion tags.

99.   (Withdrawn)   The expansion tag storage region of claim 98, wherein a first

expansion tag comprises an identifier of a destination node and a label of a destination.

100.   (Withdrawn)   The expansion tag storage region of claim 98, wherein the plurality of

expansion tags includes one of a customer separation tag, a protection tag, an operation and

management tag, a quality information tag, a frame control tag, a security tag, a user

expansion tag, and a broadcast forwarding tag.

101.   (Withdrawn)   The expansion tag storage region of claim 98, wherein the expansion

tag identification region comprises one or more of:

a forwarding tag identification bit to indicate if the expansion tag is a forwarding tag

of the plurality of expansion tags;

a region end point indication bit to indicate if the expansion tag is a final expansion

tag in the plurality of expansion tags;

a VLAN/Expansion tag indication bit to identify if the expansion tag is an expansion

tag of the plurality of expansion tags;

a tag type display region to indicate a type of the plurality of expansion tags; and

a frame control information storage region to store frame control information.

102   (Withdrawn)   The expansion tag identification region of claim 101, further

comprising a reservation bit.

103.   (Withdrawn)   The expansion tag storage region of claim 98, wherein the expansion

tag information region comprises:

an address type region to store a type of address; and

an address region to store transfer information of the Ethernet frame.

104.   (Withdrawn)   The Ethernet frame of claim 98, further comprising:

a destination MAC address region to store a destination MAC address;

a source MAC address region to store a source MAC address;

an Ethernet attribute information region; and

an FCS region.

105.   (Withdrawn)   A node configured to generate and transfer an Ethernet frame, the

Ethernet frame comprising a VLAN tag, the VLAN tag comprising:

a priority TAG region;

a TPID region;

a VLAN identification region;

an expansion tag information region; and

an expansion tag identification region.

106.   (Withdrawn)   The Ethernet frame of claim 105, comprising an expansion tag region,

the expansion tag region comprising a plurality of expansion tags.

107.   (Withdrawn)   The expansion tag information region of claim 105, comprising:

an expansion tag information region;

a CFI region; and

a priority region.

108.   (Withdrawn)   The Ethernet frame of claim 105, wherein the expansion tag

identification region comprises a TPID.

109.   (Withdrawn) The expansion tag storage region of claim 106, wherein the plurality of

expansion tags includes at least one of a customer separation tag, a protection tag, an

operation and management tag, a quality information tag, a frame control tag, a security tag, a

user expansion tag, and a broadcast forwarding tag.